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Solid Waste and
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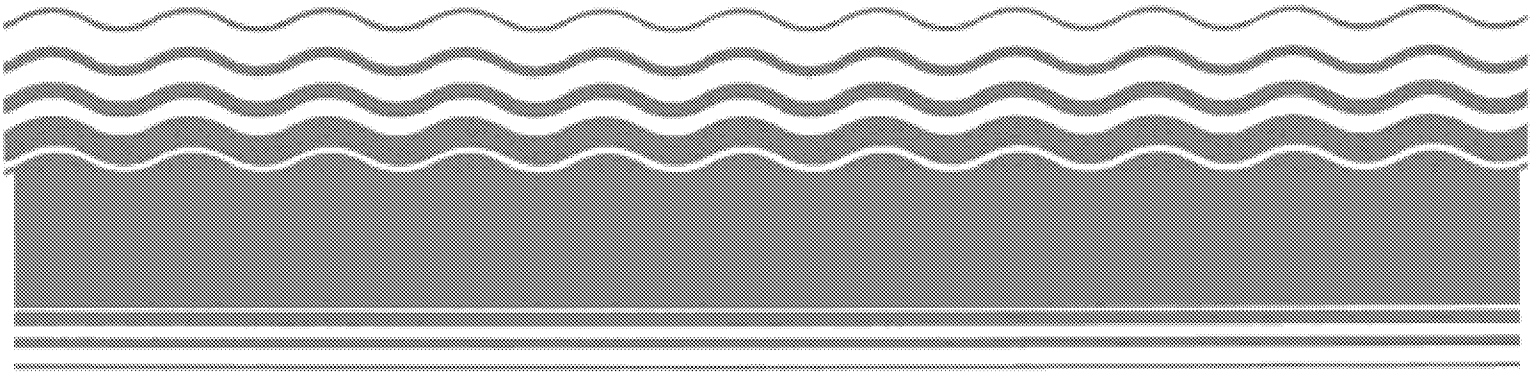
Superfund

A GUIDE TO PREPARING SUPERFUND PROPOSED PLANS, RECORDS OF DECISION, AND OTHER REMEDY SELECTION DECISION DOCUMENTS



7.0 DOCUMENTING POST-ROD CHANGES: MINOR CHANGES, EXPLANATIONS OF SIGNIFICANT DIFFERENCES, AND ROD AMENDMENTS[1]

7.1 EVALUATING POST-RECORD OF DECISION INFORMATION

After a ROD is signed, new information may be received or generated that could affect the implementation of the remedy selected in the ROD, or could prompt the reassessment of that remedy.[1] The information could be identified at any time during, immediately prior to, or after the implementation of the remedy. Where information is submitted by a PRP, the public, or the support agency after a ROD is signed, the lead agency must consider and respond to this information and place such comments and responses in the Administrative Record file when *all* of the following criteria are met (per NCP §300.825(c)):

- Comments contain significant information;
- The new information is not contained elsewhere in the Administrative Record file;
- The new information could not have been submitted during the public comment period; and
- The new information substantially supports the need to significantly alter the response action.

The lead agency also may evaluate whether a remedy change is warranted on its own merits, even where the requirements of NCP §300.825(c) are not triggered.[2]

7.2 TYPES OF POST-RECORD OF DECISION CHANGES

The lead agency's categorization of a post-ROD change to the Selected Remedy is a site-specific determination and must consider the following as set out in NCP §300.435(c)(2).

- *Scope.* Does the change alter the scope of the remedy (*e.g.*, type of treatment or containment technology, the physical area of the response, remediation goals to be achieved, type and volume of wastes to be addressed)?
- *Performance.* Would the change alter the performance (*e.g.*, treatment levels to be attained, long-term reliability of the remedy)?
- *Cost.* Are there significant changes in costs from estimates in the ROD, taking into account the recognized uncertainties associated with the hazardous waste engineering process selected? (Feasibility Study cost estimates are expected to provide an accuracy of +50 percent to -30 percent.)

Based on this evaluation, and depending on the extent or scope of modification being considered, the lead agency must make a determination as to the type of change involved (*i.e.*, nonsignificant or minor, significant, or fundamental change). Remedy changes should fall along a continuum from minor to fundamental. Similarly, an aggregate of nonsignificant or significant changes could result in a fundamental change.

Post-ROD changes fit into one of the three following categories:

- *Nonsignificant or Minor Changes* usually arise during design and construction, when modifications are made to the functional specifications of the remedy to address issues such as performance optimization, new technical informa-

[1] It is EPA's policy to encourage appropriate remedy changes in response to advances in remediation science and technology (*Superfund Reforms: Updating Remedy Decisions,* (EPA 540-F-96-026, September 1996).

[2] Responding to post-ROD comments submitted by PRPs, the public, or the support agency may only require a general overview of the comments and a simple EPA response if no change to the remedy is involved or the change is minor (see *Answers to Comments Submitted After the Superfund ROD Is Signed,* EPA memorandum, October 11, 1995, http://es.epa.gov/oeca/osre/951011. html). However, a formal public comment period may be conducted depending upon whether the change is significant or fundamental (for definitions of these types of changes see Section 7.2).

tion, support agency/community concerns and/or cost minimization (*e.g.*, value engineering process). Such changes may affect things such as the type or cost of materials, equipment, facilities, services, and supplies used to implement the remedy. The change will not have a significant impact on the scope, performance or cost of the remedy.

- *Significant Changes* generally involve a change to a component of a remedy that does not fundamentally alter the overall cleanup approach.

- *Fundamental Changes* involve an appreciable change or changes in the scope, performance, and/or cost or may be a number of significant changes that together have the effect of a fundamentalchange. An example of a fundamental change is one that results in a reconsideration of the overall waste management approach selected in the original ROD.

Highlight 7-1 provides examples of post-ROD changes. (See also NCP preamble, 55 *FR* 8772 for more information.) Please note that the examples presented in Highlight 7-1 are not meant to present strict thresholds for changes in cost, volume, or time.

7.3 DOCUMENTING POST-RECORD OF DECISION CHANGES

The type of documentation required for a post-ROD change depends on the nature of the change. Changes that significantly or fundamentally affect the remedy selected in the ROD will require more explanation and/or opportunity for public comment than those that do not. Each type of post-ROD change is associated with one of three documentation procedures: (1) a memo or note to the post-ROD file for an insignificant or minor change; (2) an explanation of significant differences (ESD) for a significant change, and (3) a ROD amendment for a fundamental change. Sample outlines for ESDs and ROD Amendments are provided in Highlight 7-2.

7.3.1 Documenting Non-Significant (or Minor) Post-ROD Changes: Memo to the Site File

Any non-significant or minor changes should be recorded in the post-ROD site file (*e.g.*, the RD/RA case file). If the lead agency chooses, non-significant changes can also be documented for the public in a Remedial Design Fact Sheet. Although not legally required, a written statement describing the change is generally recommended (See "*Answers to Comments Submitted After the Superfund ROD is Signed*," EPA memorandum, October 11, 1995, http://es.epa.gov/oeca/osre/951011. html).

7.3.2 Documenting Significant Post-ROD Changes: Explanation of Significant Differences

When documenting significant changes made to a remedy, the lead agency must comply with CERCLA §117(c) and NCP §§300.435(c)(2)(i) and 300.825(a)(2). An ESD must describe to the public the nature of the significant changes, summarize the information that led to making the changes, and affirm that the revised remedy complies with the NCP and the statutory requirements of CERCLA.

To describe the nature of the significant changes, it is suggested that a side-by-side comparison of the original and proposed remedy components be used to clearly display the significant differences.

The ESD should provide additional information on changes that have resulted in the remedy as a result of the change (*e.g.*, changes in the cleanup cost estimate or remediation time frame). Generally, a new nine-criteria analysis is not required; however, the ESD should include a statement that the ROD remains protective and continues to meet ARARs (NCP §§300.430(f)(1)(ii)(B)(1) and (2)).[3] It is also generally appropriate to prepare an ESD document when the lead agency decides to exercise a contingency remedy that was previously described in the ROD (see Section 8.3).

While the ESD is being prepared and made available to the public, the lead agency may proceed with the pre-design, design, construction, or operation activities associated with the remedy. The lead agency

[3] An ESD does not generally reopen consideration of ARARs for the remedy since an ESD does not fundamentally change the remedy. However, if an ESD results in the addition of any new components to the remedy, any ARARs that apply to the change that the ESD describes must be discussed and met or waived. For example, if any ARARs apply to an ESD change which adds stabilization of residuals to a thermal treatment remedy, they must be discussed in the ESD and met or waived.

Highlight 7-1: Examples of Post-Record of Decision Changes

(NOTE: Examples are not meant to present strict thresholds for changes in cost, volume, or time.)

Minor Changes

- **Small Increase in Volume:** Remedial design testing shows that the volume of soil requiring treatment is 75,000 cubic yards rather than the 60,000 estimated in the ROD, but the estimated cost of the overall remedy will only increase by a small percentage.

- **Disposal Location:** During remedial design, it is discovered that it is not feasible to construct the on-site landfill (which is part of the Selected Remedy) in the location specified in the ROD. However, another similar location at the site is suitable for a landfill, and this location is chosen.

- **Ground-Water Monitoring:** The Selected Remedy calls for long-term pump and treat of contaminated ground water with monitoring on a quarterly basis. After a period of time, a determination is made that no significant change in data quality or monitoring effectiveness will occur if monitoring contaminant levels in the ground water is less frequent. Ground-water monitoring is changed to semi-annual sampling.

Significant Changes

- **Large Increase in Volume/ Cost Increase:** Sampling during the remedial design phase indicates the need to significantly increase the volume of contaminated waste material to be incinerated in order to meet selected cleanup levels, thereby substantially increasing the estimated cost of the remedy.

- **Disposal Location:** The lead agency determines that it is not feasible to construct an on-site landfill for treated waste in accordance with the remedy selected in the ROD. The treated wastes must be sent to an off-site landfill. Although the overall management approach for the treated waste (landfill disposal) will remain the same, the costs and implementation time will increase significantly.

- **Contingency Remedy:** As part of an active ground-water pump and treat system, contaminant concentrations decrease to an asymptotic level which is close to attainment of the cleanup level. Investigation shows that adding additional wells to pump and treat ground water will not improve the performance of the remedy in attaining the cleanup level. The ROD included contingency language that the pump and treat remedy would continue operating until contaminant levels were reduced by at least 90%. At such time, monitored natural attenuation would be relied upon to attain the cleanup levels specified in the ROD (if performance monitoring data indicated that this would be an effective method of achieving the final cleanup levels). A decision is made to implement the contingency, thus changing the remedy from pump and treat to monitored natural attenuation. This represents a significant change in achieving the cleanup levels at the site.

- **New ARAR Promulgated (Impacts on Cleanup Levels and Other Parameters):** The lead agency determines that the attainment of a newly promulgated requirement is necessary, based on new scientific evidence, because the existing ARAR is no longer protective. Although this new requirement will significantly change the remedy (*i.e.*, cleanup level, timing, volume, or cost), it will not fundamentally alter the remedy specified in the ROD (*i.e.*, the selected technology will not change) and it will not impact the level of protection (*i.e.*, risk reduction) that the remedy will provide.

- **Land Use:** During remedial design, the local zoning board decides to change the current land use from residential to commercial. Although this new requirement will significantly change features of the remedy (*i.e.*, determination of principal or low level threats, reasonable risk scenarios, appropriate cleanup levels), it will not fundamentally alter the remedy specified in the ROD (*e.g.*, the selected technology will not change).

- **Secondary Technology:** The lead agency decides to use a biological treatment method instead of air stripping (which was specified in the ROD) for ex-situ treatment of extracted ground water. The basic pump and treat approach remains unaltered and the cleanup level specified in the ROD will be met by the alternate technology; the change is significant, but not fundamental. [See *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites* (EPA 540-R-96-023, October 1996).]

Highlight 7-1: Examples of Post-Record of Decision Changes (continued)

- **Institutional Controls:** During a five-year review, the lead agency reviews institutional control measures implemented at the site and determines that additional measures, that differ significantly from what was described in the ROD, are necessary to be protective (*e.g.*, need for an easement to replace a deed notice).

- **Change in ARARs:** At a five-year review, it is determined that a cleanup level is not consistent with an updated State cleanup standard, and thus is not protective and needs to be modified. This change will not cause a fundamental change in the volume of waste to be remediated.

Fundamental Changes

- **Change Primary Treatment Method:** The in-situ soil washing remedy selected in the ROD proves to be infeasible to implement after testing during remedial design. A decision is made to fundamentally change the remedy to excavate and thermally treat the waste.

- **Change Primary Treatment Method with Cost Increase:** Additional information obtained during remedial design testing demonstrates that the Selected Remedy for ground water, monitored natural attenuation, will not meet cleanup levels, as had been originally predicted in the RI/FS. The lead agency decides to fundamentally change the remedy from monitored natural attenuation to pump and treat. The estimated cost of the cleanup increases significantly.

- **Change Primary Treatment Method with Cost Decrease:** Pump and treat is the Selected Remedy for ground water. Prior to construction of a pump and treat system, interested parties collect and present ground-water information to the lead agency showing that contaminant concentrations are decreasing due to natural processes (*e.g.*, biodegradation, dilution, adsorption, dispersion). Modeling indicates that monitored natural attenuation will achieve cleanup levels in a time frame comparable to pump and treat at substantially less cost.

- **Change from Containment to Treatment with Cost Increase:** At a five-year review for a small industrial site, tests indicate that the containment remedy will not be protective and now a more active response approach (*e.g.*, treatment) is necessary. A new remedy must be selected that will meet protectiveness requirements, resulting in unanticipated costs for the site.

- **Technical Impracticability Waiver:** While implementing an active pump and treat remedy, the presence of DNAPL is discovered. A determination is made to invoke a Technical Impracticability Waiver of the ARAR because treatment of the DNAPL zone is impracticable from an engineering perspective. Rather than treat the source material (DNAPL) a decision is made to implement a containment approach (*e.g.*, slurry wall) for the DNAPL zone. Pump and treat will continue outside the containment zone. As a result, the scope, performance, and cost of the original remedy is fundamentally changed.

- **Community Preference:** The original remedy selected in the ROD was on-site incineration of contaminated soils with estimated costs of $50 million. The community opposes the building of an incinerator and requests that an alternate remedy be selected. New information received after the ROD was signed demonstrates that thermal desorption can meet the cleanup goals in a reasonable time frame for less cost with no loss in protection. This change is based on the community's preference for an alternative to the original Selected Remedy.

- **Volume Decrease Changes Primary Treatment Method:** The Selected Remedy called for treatment by lead recovery and recycling of lead contaminated materials. Additional investigation in design showed the volume of waste to be smaller than originally presumed. The decrease in volume made recycling uneconomical. The amended remedy calls for treatment and containment such that waste is stabilized and consolidated in a lined and capped on-site containment facility. The scope of the new remedy is more efficient, is cost-effective, and is supported by the State and the community.

should consult with the support agency, as appropriate, before issuing an ESD (NCP §300.435(c)(2)). Although not specifically required by CERCLA §121(f) and NCP §300.435(c)(2)(i), it is also recommended that the lead agency provide the support agency the opportunity to comment, and summarize the support agency's comments in the ESD. The lead agency also must publish a notice of availability and a brief description of the ESD in a major local newspaper of general circulation (as required by NCP §300.435(c)(2)(i)(B)). The ESD must be made available to the public by placing it in the Administrative Record file and information repository (NCP §§300.435(c)(2)(i)(A) and 300.825(a)(2)). A formal public comment periodis *not* required when issuing an ESD.

In some cases, an additional public comment period or public meeting may be held voluntarily on a planned ESD (NCP §300.825(b)). This may be useful where there is considerable public or PRP interest in the matter. The Office of Emergency and Remedial Response (OERR) recommends issuing the ESD in a fact sheet format as outlined in Highlight 7-2. The Regional Administrator (or their designee) must sign an ESD. In such cases it may be appropriate to delay implementation of the remedy relating to the ESD to allow a consideration of possible concerns.

7.3.3 Documenting Fundamental Post-ROD Changes: ROD Amendment

When a fundamental change is made to the basic features of the remedy selected in a ROD with respect to scope, performance, or cost, the lead agency is required to develop and document the change consistent with the ROD process (NCP §§300.435(c)(2)(ii)(A) through (H)). This entails the issuance of a revised Proposed Plan that highlights the proposed changes. An amended ROD that documents the change follows the Proposed Plan. The portion of the ROD being amended is evaluated using the nine criteria, focusing on those central to the rationale for the Selected Remedy.

In general, the introductory sections of the ROD do not need to be readdressed in the ROD Amendment but may be referenced from the previous ROD. The focus of the amendment should be to document the rationale for the amendment and provide assurances that the proposed remedy satisfies the statutory requirements. This is accomplished through an evaluation, utilizing the nine criteria, of the portion of the remedy being changed.

To describe the nature of the changes, it is suggested that a side-by-side comparison of the original and proposed remedy components be used to clearly display the differences.

The information included in a ROD Amendment is a function of the type of change made and the rationale for that change. If the amended ROD addresses the entire response action for the site or a series of operable units (*e.g.*, soil, surface water, ground water), only the portion of the remedy that is being changed (*e.g.*,ground water) requires an amendment. For the portion of the ROD being amended, a new nine-criteria analysis, including a new ARARs analysis, will be necessary (see NCP §300.430(f)(1)(ii)(B)(2)). Portions of the analysis in the original ROD can be cross-referenced, where appropriate. RD/RA activities being conducted on other portions of the site or at operable units not proposed for changes may continue during the amendment process.

When fundamental changes are proposed to the ROD, the lead agency must conduct the public participation and documentation procedures specified in NCP §§300.435(c)(2)(ii) and 300.825(a)(2). This would include issuing a revised Proposed Plan that highlights the proposed changes. The format should follow that of the Proposed Plan described in Chapter 3. The final decision to amend is not made until after consideration of public comment (NCP §300.435(c)(2)(ii)).

If a fundamental change is made after a consent decree has been entered at an enforcement-lead site, the decree may need to be modified to conform to the amended ROD, and perhaps involve the Department of Justice or the Court. RPMs should check with their Regional Counsel on how this may be accomplished.

ROD Amendments, like RODs, must be signed by the Regional Administrator (or their designee). A recommended outline and checklist can be found in Highlight 7-2.

7.4 HEADQUARTERS REVIEW AND FILING OF DECISION CHANGES

Draft ESDs and ROD Amendments (including revised Proposed Plans) should be submitted to EPA Headquarters for review and comment pursuant to *Focus Areas for Headquarters OERR Support for Regional Decision Making* (OSWER 9200.1-17, May 22, 1996). In the event that the remedy change meets the criteria for review by the National Remedy Review Board, the appropriate consultation procedures should be followed. For more information on the National Remedy Review Board, see http://www.epa. gov/superfund/programs/nrrb/index.htm. See also Appendix C, *Consolidated Guide to ConsultationProcedures for Superfund Response Decisions* (EPA 540-F-97-009, May 1997).

A copy of a signed final ESD or ROD Amendment should be submitted within 30 days of signature to the following Headquarters office:

ROD Clearinghouse
Superfund Document Center
U.S. EPA Mail Code 5202G
401 M Street, SW
Washington, DC 20460

Please refer to Appendix D for guidance on submitting decision documents to EPA Headquarters.